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Сборник статей содержит материалы семинара, посвященного архитектуре Византии и Древней Руси. В статьях отечественных и иностранных авторов (на русском и английском языках) представлены результаты новых археологических и реставрационных открытий, исследования архитектурных форм, рассмотрены вопросы типологии памятников, иконографии и стилистики монументальной живописи, строительных технологий и материалов, проблемы историографии и методики изучения византийской архитектуры. Для статей на английском языке приведены резюме на русском.

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DOME "TYPOLOGY" IN BYZANTINE CONSTANTINOPLE?

As a generalization, the presence of a dome is one of the major elements that set Byzantine churches apart from their counterparts in the medieval West. The visual landscape of Byzantine cities and towns – and particularly that of Constantinople – was characterized by the presence of domed churches and palaces[1]. Many of Constantinople's Byzantine buildings are now gone, having been replaced by the great domed mosque complexes of the Ottoman 16th century. To be sure, these mosques embody and convey a very different aesthetic in the urban landscape than their less monumental Byzantine predecessors. Nevertheless, like Istanbul today, Byzantine Constantinople was in its own way defined by the iconic presence of domes in its skyline[2].

As a major component of Byzantine religious architecture, the dome has been considered from a number of perspectives. Studies have focused on images in paint or mosaic in domes, tracing the development of the iconographic programme[3]. Others have examined the iconology of the dome as a symbol of the heavenly realm in earthly architecture, an interpretation supported by patristic texts and other writings before and after Iconoclasm[4]. It might be noted that both these perspectives – the iconographic and the iconological / ideological – are usually treated under the assumption of a linear process of development in their respective historical contexts. Of course, the fact that there existed in Byzantine building a direct relationship between decorative programmes and the architecture designed to contain and present them must also be recognized[5]. But it is the visuality of the dome itself that is – and has always been – its essence. Visible from far and near, the dome's most essential message is simple: it signifies that we have before us a space of special importance.

Like other components of architectural ensembles, the form and appearance of domes may vary depending on the region and time of construction. In this context, I refer not only to domes themselves, but primarily to the drums that carry them. In discussing building in Constantinople and elsewhere after the 8th century, scholars have sometimes noted (but more often than not they have tacitly accepted) what would seem to be the characteristics of a general trend in the development of dome and drum appearance over time. The discussion was opened early in the 20th century by Gabriel Millet, who observed that the drums of Byzantine domes dated earlier than the 11th century were often simple cylinders with straight roof copings, whereas later drums were increasingly more complex: these were frequently polygonal in plan, showed eight or more facets below an arcade-like trim, and (for

Fig. 1. Istanbul, Bodrum Camii (Myrelaion), from north-west
(*photo: M. Savage*)

churches in Greece) incorporated elements of architectural sculpture and a more decorative use of surfaces[6].

Particularly over the last couple of decades, Millet's typological approach, which was rooted in the identification of regional "schools", has been increasingly called into question as a methodology for establishing a chronological development of Byzantine building design[7]. Nevertheless, this methodology still has adherents who indeed have used it to confirm 9th- and 10th-century dates for several church buildings in Greece, including the Kountouriotissa in Pieria, the Church of the Metamorphosis at Koropi, Hagios Basileios at Methone, and the Panaxiotissa at Gaurolimne[8]. For Constantinople, securely dated examples are considerably more scarce, with the city's sole surviving building from the 9th to 10th centuries that has retained its Byzantine dome being the Myrelaion church, today's Bodrum Camii (figs. 1, 2)[9]. By contrast, even in Istanbul buildings with drum and dome designs that fit Millet's classification criteria for a later dating are relatively plentiful. The example shown here is the naos drum and dome of the Eski İmaret Camii in Istanbul, a monastic foundation possibly dating to the 11th century (fig. 3)[10].

There are enough scholars who have remained attentive to these kinds of observations and who tend to accept a kind of linear progression in drum and dome design from simple, unadorned cylinders to more complex arrangements as the centuries moved forward[11]. Others, however, have warned against this approach as a methodological trap (even though some of them on occasion have succumbed to it themselves). Marcell Restle was particularly unequivocal when he described dome design in Constantinople as "ein insgesamt äußerst kompliziertes und differenziertes Zusammenspiel der verschiedenen Parameter, die eine einfache Einteilung und vor allem eine chronologische Einreihung nach einzelnen Parametern völlig

Fig. 2. Istanbul, Bodrum Camii (Myrelaion), south façade in 1938 as photographed by R. Van Nice (*after Striker C. L. The Myrelaion (Bodrum Camii) in Istanbul. Princeton, 1981*)

Fig. 3. Istanbul, Eski İmaret Camii, from south-east (*photo: M. Savage*)

sinnlos macht"[12]. Robert Ousterhout has emphasized that Byzantine architectural developments cannot be squeezed into a linear pattern of evolution following typologies and Western models, even though attempts to do so abound[13]. In returning to the question at hand, namely whether the designs of Byzantine drums and domes can be generally categorized along linear paths of chronological development, we should begin by first questioning whether the domes of Byzantine buildings as they appear today accurately reflect their designs as originally constructed.

In this paper I will discuss a type of drum-and-dome design that, at least at first inspection, seems typical of many Byzantine church buildings dated to the 9th and 10th centuries. In this context I will address a specific phenomenon of changes and alterations made to a number of Byzantine domes over time that affected their external appearance. Finally, in questioning our understanding of dome form and design in the early Middle Byzantine period, I will suggest some ways of placing original designs and the modifications made to them in a specific historical and cultural context.

Of the hundreds of churches and monasteries built in Constantinople during the Middle and Late Byzantine periods, fewer than thirty survive in varying degrees of ruination, representing, we have been told by Cyril Mango, only around ten percent of what there once was[14]. In the light of many source studies that have appeared since Mango's publication, I suspect the actual figure is closer to five percent. And yet, in discussions of Byzantine architecture in Constantinople, it is this group of monuments that is forever and for various purposes called upon to stand in for what is seen as being representative of the era in which each particular building was constructed. An architectural form, once identified and described, might be seen as characteristic or as part of a trend for a broad period, no matter whether the said form is found at a single building site, or at several buildings whose dates span more than a century.

Furthermore, it is also often tacitly accepted that forms and styles observed at Constantinople were "exported" to other areas of the Empire, where in a kind of trickle-down process they gradually appear, allowing, of course, for a certain time delay that, we are led to assume, is to be expected with the dissemination of urban ideas to the provinces[15]. That the flow might also have gone in the other direction – that is, from the provinces to the capital, working its way up the ladder rather than down – is a concept rarely considered or only begrudgingly acknowledged[16]. Such patterns of transfer of ideas, concepts, and designs are based on modern-day analogies and, in terms of the study of historical developments in art and architecture, are rooted in Renaissance and post-Renaissance art theory. However, such generalizations are rarely helpful in discussing medieval architecture. They ignore important issues such as evidence of stylistic conservatism employed by donors in deference to certain traditions, or the copying of forms used as visual carriers of meaning in the context of emulation, or even as claims of entitlement to inheritance. A handy example of this kind of understanding of the power of architecture is the modelling of the cross-shaped, five-domed Church of San Marco in Venice, built in the 11th century, after that of the Holy Apostles in Constantinople, built by Emperor Justinian in the 6th century as the mausoleum of Byzantine Emperors[17]. In so doing, Venice emphasized the city's claim to ecclesiastical ascendancy through the association with the Apostle Saint Mark (the body of the saint had been transferred to Venice from Alexandria in 828) and proclaimed its new political stature through the material presence and visual form of the new church[18].

It is thus curious that when the architectural features particularly of medieval buildings are at issue, rarely is the notion considered that we may be dealing with elements, styles, or designs from earlier eras that were re-employed as a kind of citation of older traditions, and that these were intended to be recognizable as such by a certain class of contemporary viewers. It is all the more curious for studies of Byzantine architecture, since historians of Byzantine art have been trained to recognize "renaissances" for certain periods during which ideas and ideals from an earlier (pagan) era were "rediscovered" and reinterpreted[19]. Yet, notwithstanding the prominent example of San Marco and the Church of the Holy Apostles cited above, this is a notion that is less frequently considered by historians of Byzantine architecture. But it is a vital aspect that needs to be acknowledged if we wish to move beyond rigid concepts of initial metropolitan patronage and subsequent provincial reception.

An example of such recurrence of stylistic devices in building in Byzantium is thus called for. Indeed, many could be cited, but I will restrict myself to a fairly straightforward one. The Church of the Panhagia Chalkeon is a landmark of some prominence in Thessaloniki (fig. 4). We know from an inscription there that the building was erected in 1028 by Christophoros, the Byzantine *protospatharios* and *katepan* of Langobardia[20]. The building was constructed partially in the recessed-brick technique, the origins of which we associate with building techniques developed in the 10th century in Constantinople[21]. Other elements of the building's design that have been singled out as telltale of a connection to Constantinople include the all-brick-and-mortar construction and the half-round pilasters that rise above the cornice[22]. And yet the only structure surviving today in Constantinople that has both of these elements is the Myrelaion, today's Bodrum Camii (see figs. 1, 2). That building, it is thought, was erected not in the 11th century, but around the year 920, more than a hundred years before the consecration of

Fig. 4. Thessaloniki, Panagia Chalkeon, south façade (*photo: M. Savage*)

the Panagia Chalkeon in Thessaloniki[23]. If these elements of the Panagia Chalkeon's design are Constantinopolitan in origin, how can their slow dissemination away from the Byzantine capital, or their delayed reception so late in Thessaloniki be explained? Most scholars, including Striker and especially Krautheimer, seem not to regard the appearance of 100-year-old Constantinopolitan building practices and designs in 11th-century Thessaloniki, itself a major metropolitan centre, as problematic, exceptional or even noteworthy[24]. It seems that quiescence on such matters fits with the frequently encountered pattern of labelling Byzantine architecture, particularly that of the Middle Byzantine period, "conservative"[25]. But are we really dealing here with patterns of provincialism? After all, even in Constantinople, half-round pilasters reappear as decorative features on later buildings of the highest patronage: we have at least one on the east end of the 12th-century imperial monastery of the Pantokrator (fig. 5); and we find them again later, enlivening the north façade of the funerary chapel Theodore Metochites added to the Chora Monastery in the 14th century (fig. 6)[26].

As the example of the Panagia Chalkeon in Thessaloniki shows, developments in Byzantine architecture do not necessarily follow a clear linear progression. Given that forms and stylistic devices in architecture reappear, are re-appropriated, or are "re-cited" in new contexts often centuries after their original use in a given geographic

Fig. 5. Istanbul, Zeyrek Camii (Pantokrator Monastery), detail of east façade (*photo: M. Savage*)

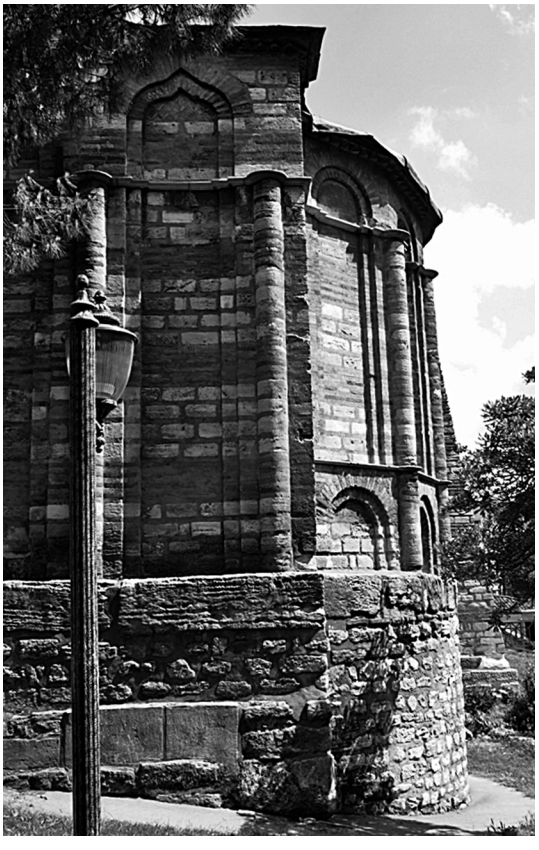

Fig. 6. Istanbul, Kariye Camii (Chora Monastery), detail of south-east corner of funerary parekklesion (*photo: M. Savage*)

region, the methodology should be viewed with some skepticism when applied as a criterion for dating buildings about which little is otherwise known. The problematic nature of the methodology has also affected our general understanding of dome designs in the Middle and Late Byzantine period in Constantinople and in areas viewed as having been influenced by developments in the Byzantine capital. This issue concerns the tendency I noted at the outset of this paper, one that sees simpler forms in the domes of earlier buildings vis-à-vis later ones.

For Constantinople, we must again open the discussion with the well-known and fairly well-studied Myrelaion church (figs. 1 and 2). Tenth-century sources are clear in attributing the foundation of the Myrelaion to Romanus Lekapenus, who was crowned Emperor in 920[27]. The building stood thoroughly ruined for much of the early 20th century and was heavy-handedly restored in 1960. For a discussion of the original form and masonry composition of the drum and dome, pre-restoration photographs of the building reveal much. The cylindrical drum is opened by eight roundheaded windows that alternate with triangular buttresses rising to the same level as the window soffit and giving rise to sawtooth copings over the windows. Above the buttresses and these copings is found a kind of spandrel wall capped by a single, sawtooth coping[28]. The rise of the spandrel wall essentially conceals much of the rise of the dome itself and allows for a conical roof of shallow incline, whose apex is not visible from the perspective of a viewer standing near the building.

In light of the accepted 10th-century date for the Myrelaion, it is imperative to examine the other Byzantine buildings in Constantinople with comparable drum solutions if we are to put the argument for a chronological classification based on drum design to the test. Surviving in the city are two other buildings with cylindrical domes that likely date to the Byzantine period: the Church of the Theotokos Panagiotissa (also known as the Panagia Mougliotissa) and the Hırami Ahmed Paşa Camii[29].

The Panagia Mougliotissa is the only Byzantine church in Istanbul that to this day is still in use as an Orthodox church. The drum of the building's dome is cylindrical with an arcaded frieze placed below a straight roofline coping (fig. 7). Thus, the arrangement appears generally comparable to that of the Myrelaion. The history of the foundation is, however, elusive. Maria Palaeologina, daughter of Michael VIII and wife of a Mongolian prince (hence the name "Mougliotissa"), was a 13th-century benefactress of the monastery. While other source evidence has been cited for dating the building as early as the 10th century, an archaeological investigation of the site has never been undertaken, nor has an examination of the building's masonry ever been possible, as the plaster that covers the entire building has never been removed[30]. Thus, the building cannot yet be reliably dated and is therefore unsuitable as evidence in determining the viability of a chronology of drum design.

The second building, the Hırami Ahmed Paşa Camii (fig. 8), is found in the north-west quadrant of the historical city not far from the Church of the Panagiotissa. The building's Byzantine dedication is unknown, but 15th- and 16th-century sources seem to identify it as the Church of St. John *en to Troullo*, a name that is not referenced in any identified Byzantine source. Unlike the Panagiotissa, the building has been freed of its plaster covering, and the architecture is available for the examination necessary for determining its likely period of construction. The most thorough published report to date remains a mere six-page description from van Millingen's now century-old study of Constantinople's Byzantine churches[31]. Van Millingen, who saw the building only before the plaster covering its walls was removed, suggested that it be dated to the 12th century. But the only reason he gave for this proposal

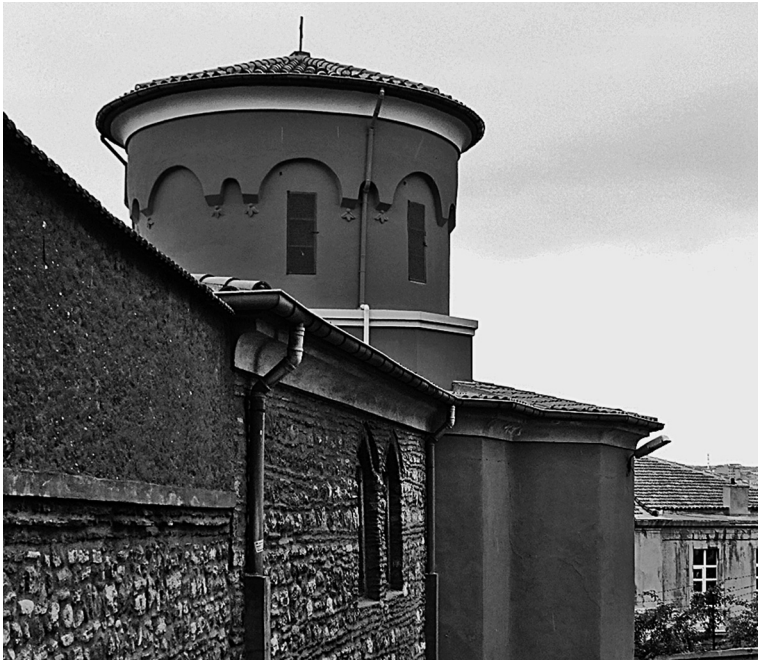

Fig. 7. Istanbul, Church of the Theotokos Panagiotissa (Panagia Mougliotissa), detail of dome exterior (*photo: M. Savage*)

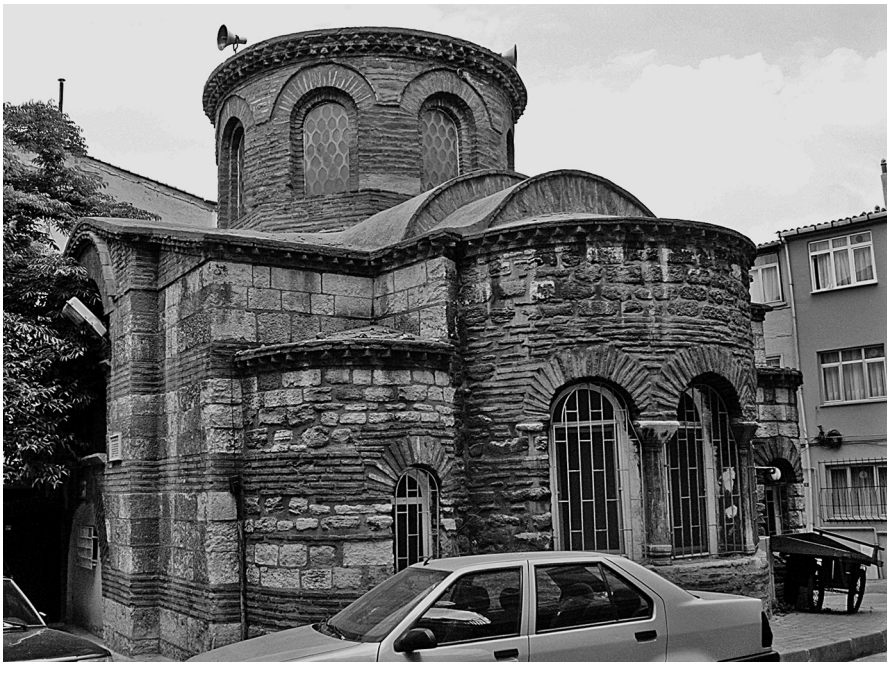

Fig. 8. Istanbul, Hırami Ahmed Paşa Camii, from south-east (*photo: M. Savage*)

was that it "belongs to the same class of building" as the Church of Christ Pantokrator in the Pantokrator Monastery, which was built between 1118 and 1136[32]. It is needless to point out that this reasoning is no longer tenable; nevertheless, van Millingen's 12th-century date for the building has never been seriously questioned. However, I have recently conducted an examination of the building's architecture – the first comprehensive examination of the structure since its plaster covering was removed during a restoration in 1960. The analysis has revealed convincing evidence for dating the building to the late 9th or early 10th century. This conclusion was based on an analysis of the building's masonry, vault construction techniques, and other evidence[33]. This dating establishes the building as roughly contemporary with the Myrelaion. We can therefore proceed to a comparison of the two structures.

It is useful first to discuss some general aspects of the architecture of both buildings before turning to the issue of drum design. Like the Myrelaion, the Hırami Ahmed Paşa Camii had been in a ruinous state before a restoration in 1960 allowed it to be used once again as a small masjid. The photographs of the structure made before the monument's restoration are extremely helpful in reconstructing original elements of the building's design and visual character. The photographs reveal that the building's roofline was altered probably already in the Byzantine period. A layer of bricks seen protruding from the face of the building belongs to the primary phase of building construction and marks the original roofline, indicated in fig. 9 by arrows. At some date after the primary phase, material was added above this line to alter

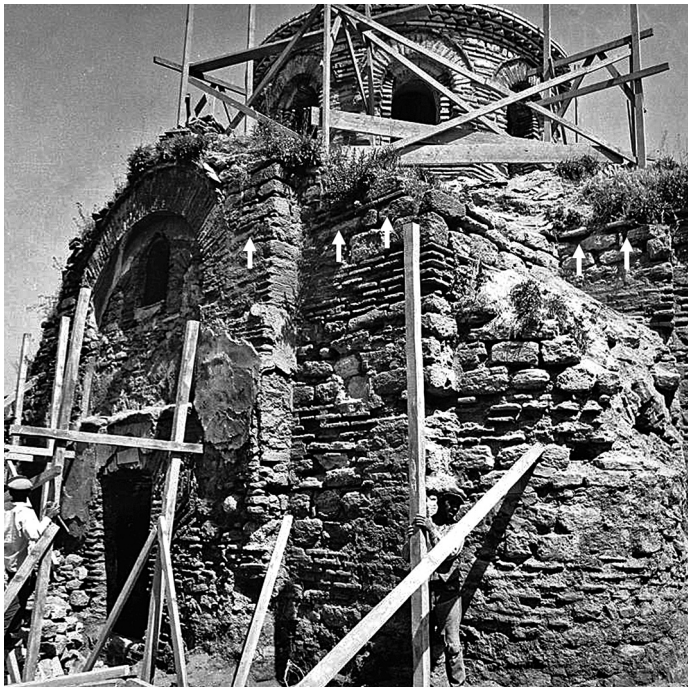

Fig. 9. Istanbul, Hırami Ahmed Paşa Camii, detail of south-east corner in 1957 (*photo: Dumbarton Oaks Research Library and Collection, Byzantine Photographs and Fieldwork Collections, Washington, D. C., with arrows added by author*)

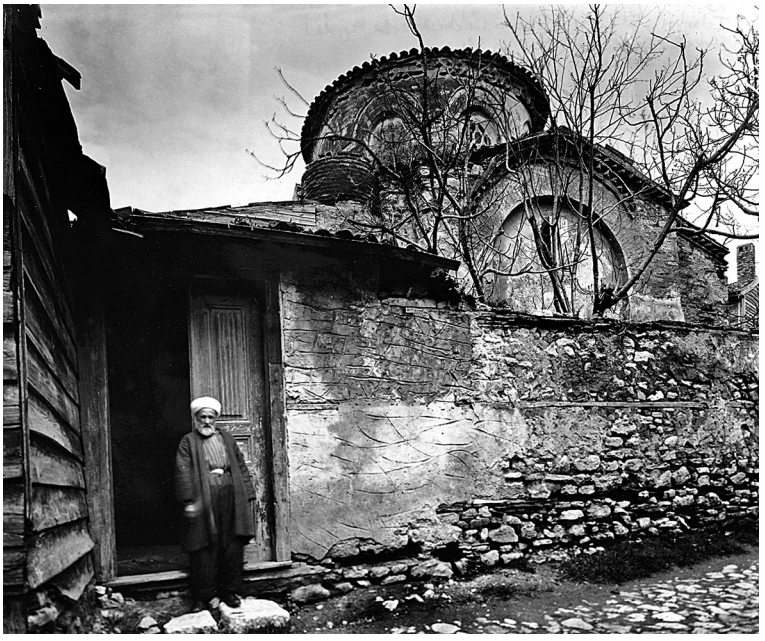

Fig. 10. Istanbul, Hırami Ahmed Paşa Camii, south façade ca. 1918
(*photo: Dumbarton Oaks Research Library and Collection, Byzantine Photographs and Fieldwork Collections, Arthur Kingsley Porter Photographs, Washington, D. C.*)

the slopes of the roofs over the crossarms. A new sawtooth coping was installed just beneath the new roofline, with the older sawtooth coping, which marked the original roofline over the crossarms, left in place. The result was the creation of a gable roof, clearly visible in the oldest photographs of the building (fig. 10).

Like the Myrelaion, the drum of the Hırami Ahmed Paşa Camii is a plain cylinder with eight roundheaded windows, above which can be seen a spandrel wall below a shallow conical dome roof. At the Hırami Ahmed Paşa Camii, however, it is clear from the photographs that modifications similar to those made to alter the roof profile over the crossarms were also made to the drum in order to change its form and consequently that of the dome exterior. The spandrel wall above the windows consists of masonry built up over an originally undulating roof profile to create a new straight roofline capping the cylindrical drum. The form of the original dome profile at the Hırami Ahmed Paşa Camii is perhaps best visualized in a reconstruction drawing (fig. 11). Examination of the pre-restoration evidence at the Myrelaion reveals that similar alterations to roof and dome profiles took place there as well, with coarser brick masonry than was used for primary construction added at some later date to effect the changes.

Other evidence at both the Myrelaion and the Hırami Ahmed Paşa Camii today is conflicting. Both buildings were restored by the same authority in the early 1960s, yet the restorers took slightly different approaches at each. While the restorations of the domes of both buildings preserved the later masonry, at the Myrelaion the later masonry above the original rooflines of the crossarm vaults was removed, whereas at the Hırami Ahmed Paşa Camii the restorers opted to reconstruct the gable roofs they observed there. As a result, the two buildings, which originally had similar roof profiles, today do not have these.

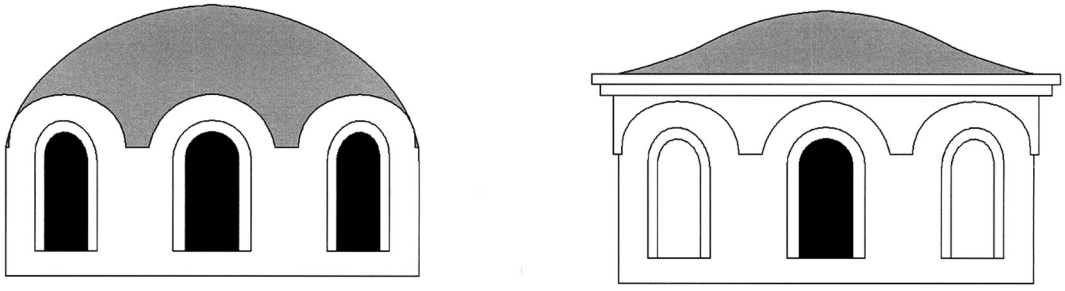

Fig. 11. Schematic reconstruction drawing of exterior of dome of Hırami Ahmed Paşa Camii showing original design (left) and later alterations (right) (*drawing: M. Savage*)

Fig. 12. Istanbul, Eski İmaret Camii, from south-east in 1940 before restoration (*after Mathews Th. The Byzantine Churches of Istanbul : A Photographic Survey. Pennsylvania University Press, 1976*)

If we examine further evidence, we find that similar alterations were made to the roof profiles of some of Istanbul's other Byzantine church buildings. For instance, the aforementioned Eski İmaret Camii dating possibly to the 11th century was restored in an inadequately documented campaign in the 1970s, with masonry from the roof levels removed (fig. 12)[34]. Early photographs of the Kalenderhane Camii, built possibly around 1200, show the drum with a regularized roofline and gable roofs over the crossarms of the naos (fig. 13). In the course of restoration of the building in the 1970s, the masonry comprising the gable roofs and in the spandrel frieze of the drum was removed, thus giving the roof of the dome an undulating form (fig. 14). The restoration of the building received a thorough report by Striker

Fig. 13. Istanbul, Kalenderhane Camii, south façade in 1950 before restoration (*after Mathews Th. The Byzantine Churches…*)

and Kuban; nevertheless the restorers did not provide any analysis of the masonry removed from these areas. As a result, valuable information from one of the few buildings in the city that preserved this type of evidence into the 1970s was lost[35].

The questions remain, however, why rooflines were altered in the first place, and when this was done. In looking for an answer to the latter question, it has been suggested that modifications to the central dome of Istanbul's Kariye Camii, the Byzantine Chora Monastery, were Ottoman alterations designed to make the building look more like a mosque[36]. While Byzantine churches were undoubtedly altered in the process of converting them into masjids, studies on the extent of these modifications are lacking. Without calling into doubt the fact that major alterations to Byzantine structures were made by the Ottomans, I would nevertheless suggest that many of the modifications that can be observed at some of the buildings in question are Byzantine. A likely time when such modifications would have been necessary was during another abrupt caesura in the city's

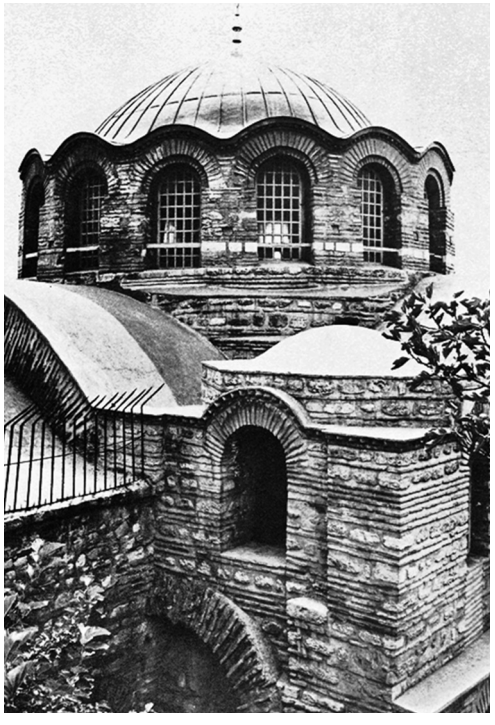

Fig. 14. Istanbul, Kalenderhane Camii, dome and detail of northwest corner, after restoration (*after Mathews Th. The Byzantine Churches…*)

history, namely in the years immediately after Latin rule in Constantinople ended in 1260. We know from historical sources that the lead roofs of churches were removed and sold for profit after the Latin conquest of the city in 1204[37]. Many of these buildings were then abandoned and left without the protection of a proper roof until well after the Byzantines retook the city in 1260. Repairs to church roofs after 1260 were at least in some cases made not with expensive lead, but rather with less costly ceramic roofing tiles, a fact supported by some archaeological evidence[38]. For the expeditious installation of new tiled roofs, it was easier and more economical to eliminate undulating surfaces by building up rooflines. Constructing gable roofs with uniform slopes produced more reliably leak-proof results than laying tiles on curved and undulating surfaces that had for decades been exposed to the elements without proper covering and anyway were in need of major repair. The quality of the bricks and building stones used for these modifications suggests that they were reclaimed from disused and fallen structures in the surrounding area. Such materials were available in abundance in the ravaged city after 1260. Rather than being cosmetic adjustments designed to alter *per se* the iconic status of an entire group of buildings, it is far more likely that many of these alterations had a more practical purpose.

Nevertheless, these alterations were made over a relatively short time span during the last decades of the 13th century. The effect was indeed a dramatic and sudden change in the appearance of many buildings. While originally intended only as practical repair measures, the alterations effectively meant that a marked change in the visuality of existing ecclesiastical architecture already took place in the Byzantine period. Church buildings that previously were characterized by iconic curvilinear profiles and undulating roof surfaces were suddenly seen with sharp lines and regular planes. The result would have been a change in the collective perception of church architecture in 13th-century Byzantine Constantinople.

The issue is indeed complicated by the fact that buildings adapted for use as masjids after the Ottomans took the city in 1453 certainly continued to undergo repairs and were otherwise subjected to alterations connected with facilitating their new functions. They may also have seen changes intended to bring their appearance into line with new aesthetic criteria for Moslem architecture that were transforming Istanbul's visual landscape in significant ways. However, the evidence has yet to be collected, and comprehensive, comparative analysis is lacking. Further study is needed before a final verdict can be made. Furthermore, analysis should not be restricted to the question of Turkish building modifications. Byzantine building practices – and especially Byzantine *restorations* of buildings – also need to be reexamined. New interpretive models must be found that move beyond simple typological classifications and the identification of regional "schools". In mapping alterations to existing structures, patterns of mobility must be documented and parameters for the exchange of ideas and technical know-how must be identified.

In closing, I should point out that the use of the word "typology" in my title is intentionally misleading. Of course, we do not have "types" of domes and drums with clear and independent structural or design delineations. But too often, scholarly discourse seems to approach the form and design of drums and domes in precisely this manner. Thus, I have tried to show that some few Byzantine domes still surviving in Constantinople from the period before 1204 had, as originally constructed, a markedly different appearance than they do today. While we may accept a certain simplicity of form for the earliest of these domes – perhaps in some cases a relatively sparsely adorned cylinder – reexamination of the Myrelaion and the Hırami Ahmed

Paşa Camii has shown that roof profiles of domes at least in Constantinople were probably not straight, but originally undulating in form, and were therefore closer in appearance to their counterparts in later periods.

Furthermore, alterations to the rooflines of church buildings that date at least from the early 10th century up to 1204 appear to have been systematic and perhaps even programmatic, an indication of a specific and characteristic workshop practice in a given period, rather than a gradual process of change over a lengthy period of time. It should be noted that some late medieval alterations to the domes of church buildings outside Constantinople have been identified[39]. Restorations of many Byzantine buildings in the 20th and 21st centuries have seen the systematic removal of any masonry determined to be from a post-primary building phase in an attempt to return buildings to what is viewed as their "original" pure state. But, if anything, such evolutions in the appearance of many church buildings tell not only of the changing functions of buildings over their lifetimes, but also of the dynamic nature of communicating meaning visually through (changing) architectural design. Restorations and other alterations to these buildings, whether medieval or modern, always affect our capacity to understand them, simply by changing the visual impact they have on us.

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[1] This impression is still reflected in the earliest topographic "picture maps" of Constantinople from the 15th and 16th centuries. See: *Manners I. R.* Constructing the Image of a City: The Representation of Constantinople in Christopher Buondelmonti's Liber Insularum Archipelagi // Annals of the Association of American Geographers. 1997. Vol. 87. N 1 (Mar.). P. 72–102. In the context of the impression of Constantinople's domed landscape on the viewer at ground level during the early Ottoman period, an essential document is Melchior Lorichs's 16th-century panorama of Constantinople. See: *Westbrook N., Dark K. R., van Meeuwen R.* Constructing Melchior Lorichs's Panorama of Constantinople // Journal of the Society of Architectural Historians. 2010. Vol. 69. N 1 (Mar.). P. 62–87.

[2] On the transformation of the visual landscape of the Byzantine city into a distinctly Islamic city (also with a useful discussion of early maps), see: *Necipoğlu G.* The Age of Sinan. Architectural Culture in the Ottoman Empire. Princeton, 2005. P. 108–115.

[3] See for instance: *Diez E., Demus O.* Byzantine Mosaics in Greece, Hosios Lucas & Daphni. Cambridge, Mass., 1931; *Dufrenne S.* Les programmes iconographiques des coupoles dans les églises du monde byzantin et post-byzantin // L'information d'histoire de l'art. 1965. N 10. P. 185–199; *Γκιολές Ν. (Gkioles N.)* Ὁ βυζαντινὸς τρούλλος και το εἰκονογραφικὸ το πρόγραμματα. Αθήνα, 1990; *Lafontaine-Dosogne J.* L'évolution du programme décoratif des églises de 1071 à 1261 // Actes du XVe congrès international d'études byzantines. 1. Αθήνα, 1979. P. 287–329. For an outline (with bibliography), see *Schellewald B.* Kuppelbilder // Reallexikon zur byzantinischen Kunst. Bd. 5. 1995. Kol. 573–620.

[4] Early studies include: *Lehmann K.* The Dome of Heaven // The Art Bulletin. 1945. N 27. P. 1–27; *Baldwin Smith E.* The Dome : A Study in the History of Ideas. Princeton, 1950. Esp. p. 85–94; more recently *Προκοπίου Α. Γ. (Prokopiu G. A.)* Κοσμολογικὸς συμβολισμὸς στὴν ἀρχιτεκτονικὴ τοῦ βυζαντινοῦ ναοῦ. Αθήνα, 1981; see also *McVey K. E.* The Domed Church as Microcosm : Literary Roots of an Architectural Symbol // DOP. 1983. [Vol.] 37. P. 91–121. Esp. note 2 for further literature.

[5] For a few succinct examples with further literature, see: *Ousterhout R.* An Apologia for Byzantine Architecture // Gesta. 1996. [Vol.] 35/1. P. 28.

[6] *Millet G.* L'École grecque dans l'architecture byzantine. Paris, 1916. P. 180–201.

[7] An example is *Mango C.* Approaches to Byzantine Architecture // Muqarnas. 1991. Vol. 8. P. 41–42.

[8] *Βοκοτόπουλος Π. (Vokotopoulos P).* Η εκκλησιαστική αρχιτεκτονική εις την Δυτικήν στερεάν Ελλάδα καί την Ηπείρον, από του τέλους του 7ου μέχρι

του τέλους του 10ου αιώνος. Θεσσαλονίκη, 1992. Σ. 156–159; *Bouras Ch.* Byzantine & Post-Byzantine Architecture in Greece. Athens, 2006. P. 73, 74.

[9] For the identification and date of the building, see: *Striker C. L.* The Myrelaion (Bodrum Camii) in Istanbul. Princeton, 1981. P. 6–7, 33.

[10] The long-accepted identification of the building as the church of the Monastery of Christos Pantepoptes, which was founded by Anna Dalassena, mother of Emperor Alexios I, sometime before 1087, has been called into question by Cyril Mango and is no longer regarded as secure. See: *Mango C.* Where at Constantinople was the Monastery of Christos Pantepoptes? // ΔΧΑΕ. 1998. [Τ.] 52. P. 87–88. See also: *Asutay-Effenberger N., Effenberger A.* Eski İmaret Camii, Bonoszisterne und Konstantinsmauer // JÖB. 2008. [Bd.] 58. S. 13–44. For a recent analysis of the building's architecture (and with references to pertinent earlier studies of the architecture), see: *Theis L.* Die Flankenräume im mittelbyzantinischen Kirchenbau : Zur Befundsicherung, Rekonstruktion und Bedeutung einer verschwundenen architektonischen Form in Konstantinopel. Wiesbaden, 2005. S. 74–82.

[11] See, for instance, the general development for Constantinople as outlined by *Krautheimer R.* Early Christian and Byzantine Architecture. 4th ed. New Haven ; London, 1986. P. 361–362.

[12] *Restle M.* Kuppel // Reallexikon zur byzantinischen Kunst. Bd. 5. 1995. Kol. 484–529.

[13] *Ousterhout R.* Apologia… P. 21–33, esp. 23–27.

[14] *Mango C.* Byzantine Architecture. New York, 1976. P. 11.

[15] This is the underlying premise of several general studies. For instance, it permeates many sections of even the most recent edition of *Krautheimer R.* Early Christian…

[16] See, for instance, *Krautheimer R.* Early Christian… P. 362, for a reluctant admission of apparent provincial influence on some elements of architectural decoration in Constantinople. Hans Buchwald has addressed the issue critically on a number of occasions. See, for instance, *Buchwald H.* Western Asia Minor as a Generator of Architectural Forms in the Byzantine Period, Provincial Back-Wash or Dynamic Center of Production? // JÖB. 1981. [Bd.] 30. P. 301–318.

[17] *Demus O.* The Church of San Marco in Venice : History, Architecture, Sculpture. Washington, D. C., 1960. P. 88–100. – (Dumbarton Oaks Studies. Vol. 6.)

[18] *Epstein A. W.* The Date and Significance of the Cathedral of Canosa in Apulia, Southern Italy // DOP. 1983. [Vol.] 37. P. 83–84.

[19] Particularly in the 20th century, scholarship on Byzantine art was shaped by issues related to the survival and revival of pagan / classical iconography. For a synopsis, see: *Corrigan K.* Iconography // The Oxford Handbook of Byzantine Studies / E. Jeffreys, J. Haldon, R. Cormack, eds. Oxford, 2008. P. 67–77.

[20] *Ευαγγελίδης Δ. Ε. (Evangelides D.)* Ἡ Παναγία τῶν Χαλκέων. Θεσσαλονίκη, 1954. Σ. 4–10.

[21] For recessed brick at the Panagia Chalkeon, see: *Βελένης, Γ. (Velenis G.).* Ερμηνεία του εξωτερικού διάκοσμου στη βυζαντινή αρχιτεκτονική. Θεσσαλονίκη, 1984. Σ. 66–71. For the technique as such, see: *Vocotopoulos P. L.* The Concealed-Course Technique : Further Examples and a Few Remarks // JÖB. 1979. [Bd.] 28. P. 247–260; *Krautheimer R.* Early Christian… P. 354, 504–505, note 3; *Ousterhout R.* Master Builders of Byzantium. Princeton, 1999. P. 174–179.

[22] *Krautheimer R.* Early Christian… P. 373; *Βελένης, Γ. (Velenis G.).* Μεσοβυζαντινή ναοδομία στη Θεσσαλονική. Αθήνα, 2003. Σ. 24–29. For an alternate view linking design elements of the building to Western influence, see: *Ioannisian O.* Some aspects of the Architecture of the Panagia Khalkeon Church in Thessaloniki (in Russian, with a brief English abstract) // Byzantium within the Context of World Culture (Transactions of the State Hermitage XLII) (ТГЭ. [Т.] 42 : Византия в контексте мировой культуры.). St. Petersburg, 2008. P. 94–111. I am grateful to Professor Ioannisian for bringing his article to my attention.

[23] *Striker C. L.* The Myrelaion… P. 6–7, 33.

[24] Ibid. P. 34; *Krautheimer R.* Early Christian… P. 373.

[25] See, for instance, *Bouras Ch.* Byzantine & Post-Byzantine Architecture. P. 70; also C. Mango's characterization of Comnenian architecture: *Mango C.* Byzantine Architecture… P. 137.

[26] *Ousterhout R.* The Architecture of the Kariye Camii in Istanbul. Washington, D.C., 1987. P. 116–126; *Idem.* Apologia… P. 27.

[27] *Striker C. L.* The Myrelaion… P. 6.

[28] Striker has stated that "the greater part of the drum exterior, together with the spandrel wall above the windows, dates to a rather careful Turkish restoration of undetermined date," however he provides no evidence to support this statement. See: *Striker C. L.* The Myrelaion… P. 21, 22. While modifications are apparent, I see no evidence to support the conclusion that these are of Turkish origin.

[29] Other cylindrical domes on Byzantine buildings in Istanbul, such as that of the former Church of the Theotokos of the monastery built in the 10th century by Constantine Lips (Fenarı İsa Camii), are arguably modern replacements and must therefore be omitted from the present discussion. See: *Mathews Th.* The Byzantine Churches of Istanbul : A Photographic Survey. University Park, 1976. P. 322.

[30] *Mathews Th.* The Byzantine Churches… P. 366–367.

[31] *Van Millingen A.* Byzantine Churches in Constantinople : Their History and Architecture. London, 1912. P. 201–206.

[32] Ibid. P. 334 and the chronological table on p. 335.

[33] The results are reported in my doctoral thesis which should appear shortly as a published monograph. See: *Savage M.* A Private Mausoleum in Byzantine Constantinople. A Study of the Hırami Ahmed Paşa Camii in Istanbul (unpublished PhD thesis). University of Vienna, 2008. P. 76–90.

[34] *Mathews Th.* The Byzantine Churches… P. 59.

[35] *Striker C. L., Kuban Y. D.* Work at Kalenderhane Camii in Istanbul : Third and Fourth Preliminary Reports // DOP. 1971. [Vol.] 25. P. 252; *Idem.* Work at Kalenderhane Camii in Istanbul : Fifth Preliminary Report (1970–1974) // DOP. 1975. [Vol.] 29. P. 311; *Idem.* Kalenderhane in Istanbul : The Buildings, their History, Architecture, and Decoration : Final Reports on the Archaeological Exploration and Restoration at Kalenderhane Camii 1966–1978. Mainz am Rhein, 1997. P. 67–68 and, for the photographs, Pls. 1–15.

[36] *Ousterhout R.* The Architecture of the Kariye Camii… P. 89.

[37] *Kidonopoulos V.* Bauten in Konstantinopel 1204–1348 : Verfall und Zerstörung, Restaurierung, Umbau und Neubau von Profan- und Sakralbauten. Wiesbaden, 1994. S. 229.

[38] *Ousterhout R., Ahunbay Z., Ahunbay M., Özügül A.* Study and Restoration of the Zeyrek Camii in Istanbul : First Report, 1997–98 // DOP. 2000. [Vol.] 54. P. 268.

[39] Although not the main focus of his discussion, for some significant examples see: *Ćurčić S.* The Role of Late Byzantine Thessalonike in Church Architecture in the Balkans // DOP. 2003. [Vol.] 57. P. 65–84, esp. 67–71.